

REMARKS

This Amendment is filed in response to the non-final Office Action dated October 17, 2007, and is respectfully submitted to be fully responsive to the objections and rejections raised therein. Accordingly, favorable reconsideration on the merits and allowance is respectfully submitted to be proper.

The amendments and how they respond to the objections and rejections set forth in the Office Action are explained below in detail.

In the accompanying Amendment, claims 2, 4, 6, 8, 10, 12, and 14 have been amended to improve their form or to correct improper claim dependencies.

No new matter has been added. Entry of the Amendment is respectfully submitted to be proper. Upon entry of the Amendment, claims 1-14 will be all the claims pending in the application.

I. Objection to the Specification

The specification stands objected to for reasons set forth in paragraphs 2-9 on pages 2-3 of the Office Action.

Applicants request reconsideration and withdrawal of the objection in view of the Amendments to the Specification provided herewith.

II. Objection to the Claims

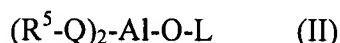
Claims 4-5 stand objected to under 37 C.F.R. § 1.75(c) as being improper multiple dependent claims.

Applicants request reconsideration and withdrawal of the claim objection over claims 4 and 5 in view of the Amendments to the Claims provided herewith.

III. Rejection Under 35 U.S.C. § 103(a) Based on Van Slyke and Shunk

Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 5,150,006 to Van Slyke *et al.* ("Van Slyke") in view of Shunk *et al.* (J. Amer. Chem. Soc. 71(12) Dec. 1949) ("Shunk").

According to the Office Van Slyke teaches an electroluminescent device comprising a compound of formula (II),

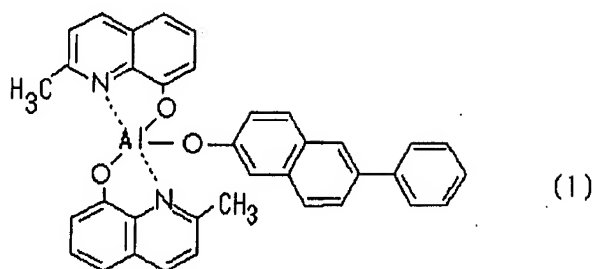


wherein Q represents a substituted 8-quinolinolato ligand, R^5 represents a substituent on the 8-quinolinolato ligand, O-L is a phenolato ligand and L is a hydrocarbon of 6 to 24 carbon atoms. Further, the Examiner asserts that the compounds are derived from HO-L phenols, where L is a hydrocarbon having 6-24 carbon atoms.

The Office admits that Van Slyke is silent about the use of the specific 6-phenyl-naphthalen-2-ol group recited in claim 14. It appears that the Office's position is that it would be obvious to one of ordinary skill in the art to make the presently claimed invention based on Van Slyke which teaches a preferred group containing 7-18 carbons.

Applicants traverse and respectfully request reconsideration and withdrawal of the rejection in view of the following remarks.

The presently claimed invention is drawn to the compound of Formula (1).



The difference between the presently claimed invention and the subject matter described in Van Slyke is that the compound (1) of the presently claimed invention contains a 6-phenyl-naphthalen-2-ol substitution, while and the compound of Van Slyke contains an unsubstituted 2-naphtholato group. Van Slyke fails to teach nor suggest that the naphthene group may be substituted with phenyl.

Furthermore, the present invention and the subject matter of Shunk are non-analogous. Shunk is directed to a process for the manufacturing of steroid analogs, which are pharmaceutical in nature. The present invention is not pharmaceutical in nature, and therefore there would be no reason for one of ordinary skill in the pertinent art to combine the teachings of Shunk with Van Slyke to arrive at the instant invention.

Accordingly, Applicants submit that claim 14 is patentable over the art of record and respectfully request withdrawal of the rejection.

IV. Rejection Under 35 U.S.C. § 103(a) Based on Haase, Van Slyke and Shunk

Claims 1-3 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 6,791,258 to Haase *et al.* ("Haase") in view of Van Slyke and further in view of Shunk.

According to the Office, Haase describes a process of making a multicolor electroluminescent device comprising an anode, a hole injection layer, a hole transport layer, an electron transport layer, an electron injection layer and a cathode wherein the electron transport layer is comprised of a compound. The Office admits that Haase fails to teach present Formula (I) as recited in claim 1, but asserts that Van Slyke together with Shunk suggest the specific aluminum complex recited in claim 1.

Haase is directed to full color organic light emitting display devices and methods of producing same. Figure 2 (Fig. 2) illustrated below depicts the structure of an OLED described in Haase. Accordingly, the invention in Haase is an OLED comprising an anode 42, comprising an transparent conductor, an optional buffer layer 44 which may be deposited between the anode and the hole injection layer 48, an optional hole injection layer 46, an electron transport layer 50 and an optional electron injection layer 52, which may be deposited before the cathode layer 54.

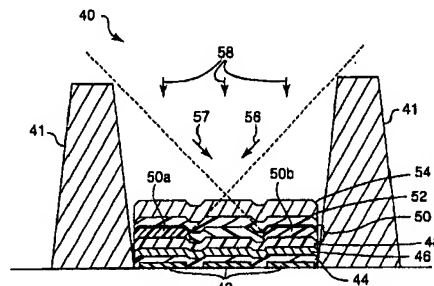


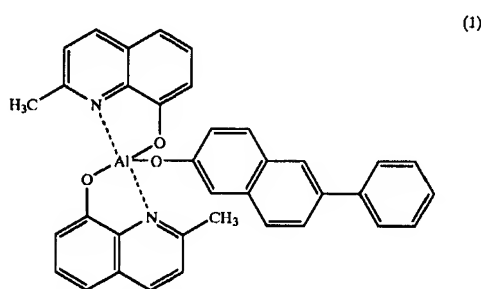
FIG. 2

Claim 1 of the present invention recites "An organic electroluminescence device comprising

- (1) an anode;
- (2) a hole transport layer comprising an organic compound;

- (3) a light emitting layer having an organic compound;
- (4) an electron transport layer having an organic compound; and
- (5) a cathode

which are stacked, characterized in that the light emitting layer (3) includes (A) an organic host material represented by Formula (1) and (B) a phosphorescent organic guest material.



Haase, Van Slyke, and Shunk fail to teach or suggest subject matter of claim 1, single or in combination. First, Haase fails to teach or suggest element (3)(A) or (3)(B). Namely, a light emitting layer the electron transport layer comprises BA1q, to which the Office asserts corresponds to Formula (1) of the present invention. (See, Office Action at page 6, lines 1-2). Applicants traverse because Formula (I) as recited in claim 1, corresponds to the light emitting layer (3), not the electron transport layer.

Furthermore, Applicants submit that Haase fails to teach a OLED comprising a light emitting layer wherein the light emitting layer (3) includes (A) an organic host material represented by the following structural Formula (1) and (B) a phosphorescent organic guest material. Haase does not mention a phosphorescent organic guest material as a component of the light emitting layer. In the present invention, the light emitting layer is an organic material

having an electron transportability doped with an organic host material (Formula 1) and an organic quest material.

In sum, Haase does not teach or suggest an EL device having all five components: cathode, electron transfer layer, light emission layer, hole transparent layer, and anode components wherein the light emission layer comprises an organic host material represented by Formula (1) and a phosphorescent organic guest material as recited in claim 1. Accordingly, withdrawal of the rejection is respectfully requested.

V. Rejection Under 35 U.S.C. § 103(a) Based on Thompson, Van Slyke, Shunk and Baldo

Claims 1-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,303,238 to Thompson *et al.* ("Thompson") in view of Van Slyke and in further view of Shunk and Baldo *et al.*, Physical Review B, 62(16), pp. 10958-10699 (October 2000) ("Baldo").

The Office states in relative part that Thompson discloses an electroluminescent device comprising an anode, a hole transport layer, an electron transporting layer and a cathode layer, where the emissive layer is between the electron transporting layer and the hole transporting layer, and where the emissive layer comprises a charge carrying host material and a phosphorescent material and a phosphorescent material, such as platinum octaethylporphine.

The Office admits that Thompson is silent as to the specific phenolato aluminum complexes of the host material for the electroluminescent device, but alleges that Van Slyke in view of Shunk teach the specific aluminum complex is an obvious variant of the aluminum complexes reported by Van Slyke. The Office further states that based on the teaching of Baldo, it would have been obvious to one of ordinary skill in the art to use the phenolato aluminum

compound envisioned by Van Slyke in an electroluminescent device described by Thompson for the purpose of improving phosphorescence efficiency.

Applicants traverse.

Thompson describes organic light emitting devices (OLED) comprised of emissive layers that contain a phosphorescent dopant compound. The emission from the device is obtained through a phosphorescent decay process. The OLED comprises a heterostructure for producing electroluminescence. The heterostructure for producing electroluminescence includes a hole injecting anode layer, a hole transporting layer, an electron transporting layer and a cathode. An additional separate emissive layer may be added between the hole transporting layer and the electron transporting layer to form a double heterostructure. (Thompson, col. 9, ll. 57-66). The emission layer is comprised of an emitting compound represented by formula (I).

Thompson fails to teach the stacked components of an EL device comprising a light emitting layer, wherein the light emitting layer comprises an aluminum chelate of Formula (1) as an organic host material, and further comprises a phosphorescent organic guest material. Thompson merely describes OLED comprising platinum octaethylporphine (PtOEP), a compound that produces narrow emission band that peaks near 640 nm when the PtOEP is doped in an electron transporting layer comprised of tris 8-hydroxy quinoline aluminum (Alq3).

Thompson fails to teach an aluminum chelate of Formula (1) as a material of the light emitting layer. Further, Alq3 is not an obvious variant of Formula (1). Alq3 and Formula (1) are structurally different and therefore cannot be expected to have the same or similar properties. Furthermore, Thompson teaches that Alq3 is a material used in the electron transporting layer, not in the light emitting layer. (See, col. 10 at lines 63-65).

There is no teaching in Thompson that would motivate one skilled in the art to combine Thompson and Van Slyke to arrive at the instant invention. Even assuming so, Van Slyke fails to disclose or suggest the aluminum chelate of Formula (1). Furthermore as mentioned above, Van Slyke fails to teach an obvious variant of Formula (1). Thus, the references alone or combined do not teach or suggest the present invention as recited in claim 1.

Accordingly, Applicants respectfully request withdrawal of the rejection.

VI. Double Patenting Rejections

Claims 1-3 are provisionally rejected on grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 3, 5, 11, 12, 15 of co-pending application 10/282,244 in view of Van Slyke.

Claims 1-3 and 14 are provisionally rejected on grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 1-3 and 8 of co-pending application No. 10/566,725.

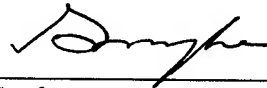
With respect to co-pending application 10/282,244, Applicants submit that the aluminum complex disclosed in co-pending application No. 10/282,244 does not include a phenyl substituted naphthalato group. Therefore, the organic EL device of No. 10/282,244 Application is different from the present invention including the organic host material represented by the specific structural Formula (1) in claim 1.

Regarding Application 10/566,725, Applicants submit herewith a Terminal Disclaimer over co-pending Application 10566,725. Consideration of the Terminal Disclaimer is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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CUSTOMER NUMBER

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